



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

646.3014

Job Sheet 170450

DAS
13
9-09



Part No: 646.3014

Job Qty: 12 ea

Part Name: Blade



MAR 20 2018

Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 1/16/18

Job Tracking No:

Created By: Linda Lacelle

Due Date: 2/2/18

Type: SOLD

Description:

Note: DWG REV N/C SHEET 11 IPP REV:A NEW ISSUE 12/11/09 JFS VERIFY BY: JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup	Run	Workcenter / Supplier	Lead Time	
90	Start up Operation	12 Ea		2/2/18	0.00	0.00	Start Up Machining-1		
100	Bandsaw	12 pcs		2/2/18	0.00	0.64	Bandsaw1		
110	CNC Vertical Machining	12 pcs		2/2/18	0.63	9.67	HAAS1-1		
120	QC	12 pcs		2/2/18	0.00	0.00	QC2 Machining-1		
130	QC	12 pcs		2/2/18	0.00	0.00	QC8 Machining-1		
140	Outsource	12 pcs		2/2/18	0.00	0.00	Outsource1	39181	
150	Packaging	12 pcs		2/2/18	0.00	0.00	Packaging2		
155	QC	12 pcs		2/2/18	0.00	0.00	QC5		
160	SprayPaint	12 pcs		2/2/18	0.00	0.33	Spray Paint		
170	QC	12 pcs		2/2/18	0.00	0.00	QC14		
180	Packaging	12 pcs		2/2/18	0.00	0.00	Packaging3-1		
190	QC21-SA	12 Ea		2/2/18	0.00	0.00	QC21		

Part Op 100 - Cut Blank at 2.670"

Descriptions: 110 - 1-Machine per folio FB150

140 - HEAT TREAT AS PER DWG, SEE NOTE #3

160 - PRIME AS PER DWG, SEE NOTE #4

180 - ****IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	MSTEEL-A2-B0.500X1.250	3	79	0	0

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube Machining ☐ Cross tube ☐ Engineering ☐ Quality ☐ Other ☐																																															
Date : _____		Step #: _____																																															
Description Work Order Deviation																																																	
Root Cause <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">Environment ☐</td> <td style="width: 15%;">No Re-verification ☐</td> <td style="width: 15%;">Pressure/Forced ☐</td> <td style="width: 15%;">Tempe ☐</td> </tr> <tr> <td>Design ☐</td> <td>Operator ☐</td> <td>Bending ☐</td> <td>Set-up ☐</td> </tr> <tr> <td>Doc/Data ☐</td> <td>Offset/Setup ☐</td> <td>Centre Not Concentric ☐</td> <td>BOM/Rc ☐</td> </tr> <tr> <td>Equip/Tooling ☐</td> <td>Supplier ☐</td> <td>Cracks ☐</td> <td>Broken/☐</td> </tr> <tr> <td>Handling/Pre ☐</td> <td>Training ☐</td> <td>Crimp/Kink/Ripple/Wave ☐</td> <td>Inspectic ☐</td> </tr> <tr> <td>Material ☐</td> <td>Use for Testing ☐</td> <td>Cuffs ☐</td> <td>Contamir ☐</td> </tr> <tr> <td>Internal Transport ☐</td> <td>Poor Information ☐</td> <td>Crushing ☐</td> <td>Countersi ☐</td> </tr> <tr> <td>Tribal Knowledge ☐</td> <td>Rushing ☐</td> <td>Heat Treat ☐</td> <td>Cut Too St ☐</td> </tr> <tr> <td>LOA ☐</td> <td>Product Improvement ☐</td> <td>Wave/Twist in Tube ☐</td> <td>Instruction ☐</td> </tr> <tr> <td>Substation ☐</td> <td>Process Improvement ☐</td> <td>Marks/Chatter ☐</td> <td>Drill Holes ☐</td> </tr> <tr> <td>Past Expiry Date ☐</td> <td>Manufacturing Process ☐</td> <td colspan="2" rowspan="2">OTHER : ☐</td> </tr> <tr> <td>Misidentified ☐</td> <td>Past Due ☐</td> </tr> </table>				Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Tempe ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Rc ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/ ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspectic ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamir ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersi ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too St ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instruction ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : ☐		Misidentified ☐	Past Due ☐
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Completed By _____

Lead hand / Supervisor Approval Verification _____

C / QA Coordinator Approval _____

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/Under tolerance
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Container No: 8043526
AEROSPACE
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Date: 02/18/18
 Inspector: 646.3000
 Revision: 646.3000
 Job No: 170450
 Part: 646.3014
 Serial No/Batch: 8043526
 Container No: 8043526
 DART Aerospace Ltd.
 1270 Aberdeen Street
 Hawkebury, ON K5A 1K7
 CANADA
 TEL: 1 813 632-8200
 Email: sales@dartaero.com
 www.dartaero.com

Part Specifications					
Spec No	Description	Target/Tolerance	Limits	Type	Special Comments
1	Blade	0.375inches $\pm$ 0.010	0.385 0.365		
2	Blade	0.940inches $\pm$ 0.030	0.970 0.910		
3	Blade	0.524inches $\pm$ 0.010	0.534 0.514		
4	Blade	0.229inches $\pm$ 0.002	0.231 0.227		
5	Blade	1.313inches $\pm$ 0.002	1.315 1.311		
6	Blade	2.540inches $\pm$ 0.030	2.570 2.510		
7	Blade	2.395inches $\pm$ 0.010	2.405 2.385		
8	Blade	2.128inches $\pm$ 0.010	2.138 2.118		
9	Blade	0.177inches + 0.005 - 0.001	0.182 0.176	diameter	
10	Blade	0.524inches $\pm$ 0.010	0.534 0.514		
11	Blade	0.569inches $\pm$ 0.002	0.571 0.567		
12	Blade	66.500Degrees $\pm$ 0.500	67.000 66.000	Angle	
13	Blade	60.000Degrees $\pm$ 0.500	60.500 59.500	Angle	

Plex 1/16/18 1:27 PM dart.lacelle.linda

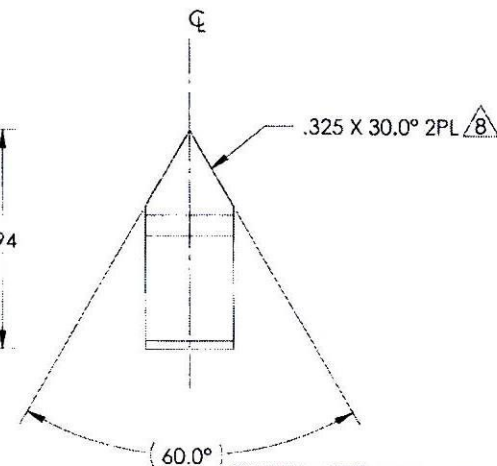
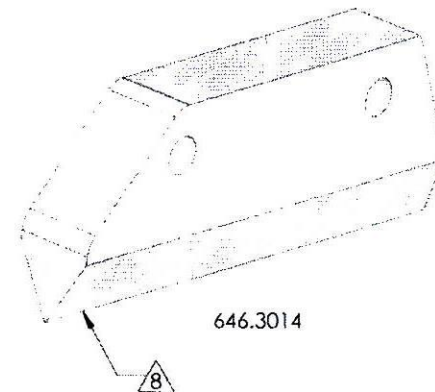
DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								

[illegible]

APICAL INDUSTRIES
 2400 TEMPLE MERCHIS DR.
 OCEANSIDE CA. 92055-5512 (760) 724-5300
 LOWER CUTTER ASSY



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER **PO039181**

Supplier: MEI001-VC
Metcor Inc.
560 Boul. Arthur Sauve
Saint-Eustache
QC
J7R 5A8 Canada
Phone: 450 473 1884
Fax: 450 491 5498

PO No: PO039181
PO Date: 3/2/18
Due Date: 3/20/18
Purchase Order Revision:
Revision Date:
Ship-To Contact: Lacelle, Linda
Phone: llacelle@dartaero.com

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground
Pynt Terms: Net 30
Freight Terms:
Special Comments:

Items

Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	171547	D2741	Replacement Blade Issue P/O: HARDEN MATERIAL: ULTIMATE TENSILE STRENGTH = 152 KSI MINIMUM YIELD TENSILE STENGHT = 141 KSI (34-40 HRC) SAND BLAST PART AFTER HEAT TREAT \ NOTE: DO NOT OIL AFTER SANDBLAST NOTE: DETAIL C OF C REQUIRED	Firmed	3/27/18	38 pcs	0 pcs	38 pcs	\$18.0152632/pcs	\$684.58
Line Item Note part made from 4130 bar										
2		646.3013	Blade ISSUE P/O: FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS As Per Dwg 646.3000 PART ARE MADE FROM AISI A2 TOOL STEEL	Firmed	3/20/18	12 pcs	0 pcs ✓ 12x	12 pcs AT 18/03/20	\$2.2977/pcs	\$27.57

Items										
Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
3		646.3014	Blade FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS As Per Dwg 646.3000 PART ARE MADE FROM AISI A2 TOOL STEEL	Firmed	3/20/18	12 pcs ✓	0 pcs 11x	12 pcs AT 18/03/20	\$2.2977/pcs	\$27.57
4	170451	646.3015	Blade FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS As per dwg 646.3000 PART ARE MADE FROM AISI A2 TOOL STEEL DETAIL OF C OF C REQUIRED	Firmed	3/20/18	12 pcs ✓	0 pcs 12x	12 pcs AT 18/03/20	\$2.2977/pcs	\$27.57
5	170459	646.3314	Blade HEAT TREAT AS PER DWG 646.3300 FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS PART ARE MADE FROM AISI A2 TOOL STEEL	Firmed	3/20/18	12 pcs ✓	0 pcs 12x	12 pcs AT 18/03/20	\$2.2977/pcs	\$27.57
6	170460	646.3315	Blade HEAT TREAT AS PER DWG 646.3300 FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS PART ARE MADE FROM AISI A2 TOOL STEEL PLEASE NOTE: DETAIL C OF C REQUIRED	Firmed	3/20/18	12 pcs ✓	0 pcs 12x	12 pcs AT 18/03/20	\$2.2977/pcs	\$27.57
7		646.3316	Blade HEAT TREAT AS PER DWG 646.3300 FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS PART ARE MADE FROM AISI A2 TOOL STEEL PLEASE NOTE: DETAIL C OF C REQUIRED	Firmed	3/20/18	12 pcs ✓	0 pcs 12x	12 pcs AT 18/03/20	\$2.2977/pcs	\$27.57